

RESPONSE TO RESTRICTION AND ELECTION OF SPECIES REQUIREMENTS AND  
SECOND PRELIMINARY AMENDMENT

U.S. Application No.: 10/553,100

Attorney Docket No.: Q90338

**AMENDMENTS TO THE CLAIMS**

**This listing of claims will replace all prior versions and listings of claims in the  
application:**

**LISTING OF CLAIMS:**

1. (canceled).

2. (currently amended): ~~The~~ A magnetic substance-encapsulated particle ~~according to~~  
~~claim 1,~~

which comprises an organic polymer material and a magnetic substance having an  
average particle size of 1 to 30 nm, the magnetic substance being contained within a particle in a  
state of being dispersed; and

wherein the absolute deviation of a component ratio between a carbon element  
composing the organic polymer material and a metal element composing the magnetic substance  
is 0.3 or less.

3. (currently amended): The magnetic substance-encapsulated particle according to  
claim ~~1~~ 2,

wherein the magnetic substance is formed by oxidization of a metal ion within a particle  
in a polymerization process of forming the magnetic substance-encapsulated particle.

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4. (original): The magnetic substance-encapsulated particle according to claim 3,  
wherein the metal ion is an iron ion.

5. (currently amended): The magnetic substance-encapsulated particle according to  
claim ~~1~~2,  
wherein a main constituent of the organic polymer material is a polymer comprising an  
acrylic monomer.

6. (original): The magnetic substance-encapsulated particle according to claim 5,  
wherein the acrylic monomer is a monomer having a glycidyl group.

7. (currently amended): The magnetic substance-encapsulated particle according to  
claim ~~1~~2,  
wherein a main constituent of the organic polymer material is a polymer comprising a  
monomer having a glycidyl group and a styrenic monomer.

8. (original): The magnetic substance-encapsulated particle according to claim 7,  
wherein the proportion of a monomer unit derived from the styrenic monomer in the  
organic polymer material is 5 to 90% by weight.

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9. (canceled):

10. (currently amended): The magnetic substance-encapsulated particle according to  
claim ~~1~~2,

wherein the organic polymer material is crosslinked.

11. (currently amended): The magnetic substance-encapsulated particle according to  
claim ~~1~~2,

which has at least a functional group selected from the group consisting of a carboxyl  
group, a hydroxyl group, an epoxy group, an amino group, a triethylammonium group, a  
dimethylamino group and a sulfonic acid group at the surface of the particle.

12. (currently amended): The magnetic substance-encapsulated particle according to  
claim ~~1~~2,

wherein an average particle size is 0.05 to 1  $\mu\text{m}$ .

13. (currently amended): The magnetic substance-encapsulated particle according to  
claim ~~1~~2,

wherein a content of the magnetic substance is 0.1 to 50% by weight.

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14. (currently amended): The magnetic substance-encapsulated particle according to claim ~~1~~2,

wherein an average particle size of the magnetic substance is 2 to 10 nm.

15. (currently amended): The magnetic substance-encapsulated particle according to claim ~~1~~2,

wherein a linker having a functional group capable of forming a covalent bond with an antigen or an antibody binds to a particle surface.

16. (original): The magnetic substance-encapsulated particle according to claim 15,  
wherein the functional group capable of forming a covalent bond with an antigen or an antibody is an epoxy group.

17. (previously presented): The magnetic substance-encapsulated particle according to claim 15,

wherein the linker is polyethylene glycol diglycidyl ether.

18. (withdrawn - currently amended): A method of producing a magnetic substance-encapsulated particle according to claim 2 comprising the steps of:

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polymerizing a monomer not having a hydrophilic group and/or a monomer having a hydrophilic group in a water solvent to form a particle; and

oxidizing a metal ion while taking in the metal ion into the particle to form a magnetic substance,

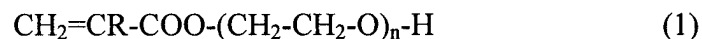
the step of forming a particle and the step of forming a magnetic substance being simultaneously performed.

19. (withdrawn): The method of producing the magnetic substance-encapsulated particle according to claim 18,

wherein the monomer not having a hydrophilic group is an acrylic monomer having a glycidyl group, or an acrylic monomer having a glycidyl group and a styrenic monomer.

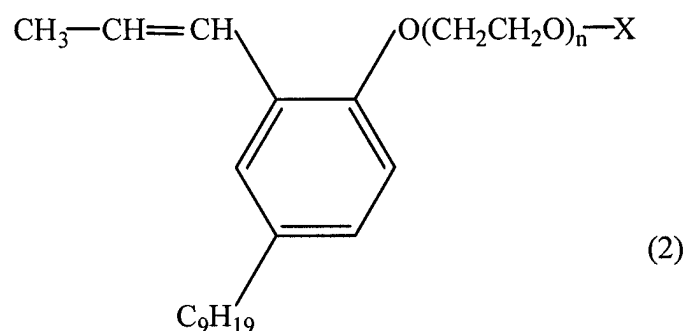
20. (withdrawn): The method of producing the magnetic substance-encapsulated particle according to claim 18,

wherein a monomer to form a particle comprises a monomer not having a hydrophilic group and a monomer having a hydrophilic group, and the monomer having a hydrophilic group is polyethylene glycol (meth)acrylate represented by the following general formula (1) or a compound represented by the following general formula (2):



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in the formula, R represents H or CH<sub>3</sub>, and n represents an integer of 1 to 20,



in the formula, X represents H or SO<sub>3</sub><sup>-</sup>NH<sub>4</sub><sup>+</sup>, and n represents an integer of 3 to 30.

21. (withdrawn): The method of producing the magnetic substance-encapsulated particle according to claim 18,

wherein in the step of forming a particle, a reactive emulsifier is added as a copolymerization monomer.

22. (withdrawn): The method of producing the magnetic substance-encapsulated particle according to claim 18,

wherein in the step of forming a particle, a polymerization initiator is added afterward.

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23. (withdrawn): A particle for immunoassay,

which is obtainable by adsorbing or binding an antigen or an antibody to the magnetic substance-encapsulated particle according to claim 1.

24. (withdrawn): A method of immunoassay,

wherein the magnetic substance-encapsulated particle according to claim 1 is used.

25. (withdrawn): A method of immunoassay,

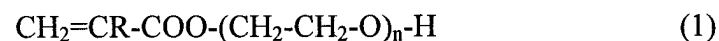
wherein the magnetic substance-encapsulated particle according to claim 1, is used as a marker.

26. (withdrawn): The method of immunoassay according to claim 24,

wherein an immuno chromatogram method is used.

27. (new): The magnetic substance-encapsulated particle according to claim 5, which

further has polyethylene glycol (meth)acrylate represented by the following general formula (1)



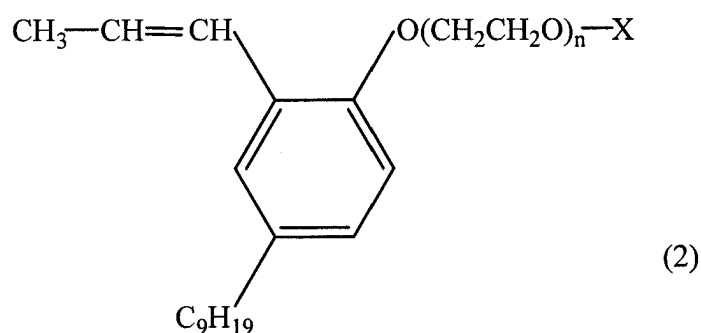
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wherein R represents H or CH<sub>3</sub>, and n represents an integer of 1 to 20,  
as a monomer component of a polymer composing the organic polymer material.

28. (new): The magnetic substance-encapsulated particle according to claim 5, which  
further has a compound represented by the following general formula (2)



wherein X represents H or SO<sub>3</sub><sup>-</sup>NH<sub>4</sub><sup>+</sup>, and n represents an integer of 3 to 30,  
as a monomer component of a polymer composing the organic polymer material: .